Scientific Review of Riparian Setback Widths contained in Riparian Setbacks. Technical Information for Decision Makes 3rd revision, January 2006. Chagrin River Watershed Partners, Inc. and Stuart S. Schwartz, Ph.D. under award NAO3NO54190052 from NOAA and the Ohio Department of Natural Resources.

In a comprehensive review of riparian literature, Scheuler and Holland state that the typical minimum base width recommended to provide adequate stream protection is 100 ft. noting that buffers may be expanded beyond the minimum 100 ft. to incorporate the following conditions:

- The full extent of the 100-year floodplain.
- Steep slopes greater than 25%.
- Adjacent delineated wetlands or critical habitats.
- Higher order or quality streams.

Source: Scheuler, T.R. and H.K. Holland, eds. *The Practice of Watershed Protection.* 2000, Center for Watershed Protection: Ellicott City, MD.

In the United States Department of Agriculture (USDA) Forest Service handbook for establishing and maintaining riparian forest buffers in the Chesapeake Bay watershed, criteria for determining riparian buffer width includes the value of the resource, the site and watershed traits, intensity of adjacent land uses, and desired buffer functions. The following minimum width ranges are recommended based on specific functions:

- Bank stabilization and aquatic food web processes – 10 ft. to 40 ft.
- Water temperature stabilization – 10 ft. to 60 ft.
- Nitrogen removal – 30 ft. to 140 ft.
- Sediment removal – 50 ft. to 160 ft.
- Flood mitigation – 65 ft. to 225 ft.
- Wildlife habitat – 45 ft. to 255 ft.

Source: Palone, R.S. and A.H. Todd, eds. *Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers.* USDA Forest Service. NA-TP-02-97. 1997.

In the Cuyahoga Valley National Park, the National Park Service has recommended that riparian setbacks range from 50 ft. to 120 ft. depending on drainage area, plus an additional 2 ft. for each 1% increase in slope.

Source: CVNP, *Riparian Buffer Plan for Proposed Agricultural Lands.* 2002, Cuyahoga Valley National Park, National Park Service. U.S. Dept. of the Interior.

The City of Everett, Washington conducted a review of riparian literature and, as applied to the riparian function requirements of their community, came up with the following buffer width recommendations:

- Sediment Retention and Filtration – 100 ft. to 300 ft.
- Bank Stability – 100 ft. to 125 ft.
- Small Woody Debris – 250 ft.
- Shade/Water Temperature – 35 ft. to 250 ft.
- Water Quality – 13 ft. to 600 ft.
- Wildlife Habitat – 30 ft. to 1000 ft.

Source: Everett, *Use of Best Available Science in City of Everett Buffer Regulations: Non-Shoreline Streams. Prepared for the City of Everett, WA. by The Watershed Company, Kirkland Washington.* 2003.

The City of Renton, Washington conducted a similar review of riparian literature to provide the scientific support for their riparian buffer ordinance, and reported the following recommended minimum buffer widths for their community:

- Pollutant Trapping – 50 ft. to 100 ft.
- Sediment Trapping – 50 ft. to 200 ft.
- Provide Particulate Nutrients to Stream (detritus) – 50 ft. to 100 ft.
- Microclimate Control – 100 ft. to 525 ft.
- Shade and Temperature Control – 50 ft. to 250 ft.
- Human Disturbance Control – 25 ft. to 50 ft.
- Bank Stability – 40 ft. to 70 ft.

Source: *Best Available Science Literature Review and Stream Buffer Recommendations. Prepared for the City of Renton, by A.C.Kindig & Co., Bellevue, WA. and Cedarock Consultants, Inc. Woodinville, WA* 2003.